

## Habitat Mapping Project Overview

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# 1 Introduction

## 1.1 Overview

This report details work undertaken to create a new Habitat Map for the City of Edinburgh Council (CEC) Local Authority area. This new Habitat Map will act as a habitat baseline, and can be used for various purposes. The map serves as an update to the previous habitat baseline survey, which was finalised in 2003, using Phase 1 Habitat Survey data collected in 2001 and 2002.

The Habitat Mapping Project has been initiated as part of the Evidence Report for the forthcoming new Local Development Plan, City Plan 2040 (CP2040). The project objective is to create a habitat map for Edinburgh using the best available data sources.

The Habitat Map will focus on creating an accurate map of habitats which have high nature conservation value. Habitats of lower nature conservation value will be included, but will not be subject to the same level of scrutiny, and are likely to be less accurate than those of high nature conservation value.

## 1.2 Use

The Habitat Map will be used to evidence the extent and type of habitats in the CEC boundary, and inform future spatial planning including site allocation in the Local Development Plan. Beyond City Plan 2040, the mapping could be used to inform strategic planning and land management initiatives such as Designated Site Assessments, [Nature Networks](#), Site Management Plans and the forthcoming [Forest and Woodland Strategy](#). It will also support the consideration of biodiversity within development management, in particular the identification and delivery of positive effects for biodiversity. The Habitat Map would be able to assist with monitoring and evaluation of habitat-based interventions, and could be used to inform a range of CEC workstreams and partner projects, such as those carried out by the Edinburgh Biodiversity Partnership.

## 1.3 Creation and Maintenance

Section 2 details the methodology for the creation of the Habitat Map to date. The Habitat Map will be created and managed internally by CEC. The final Habitat Map will be classified using the Phase 1 Habitat Classification system. The creation of the Habitat Map will primarily be a desk-based exercise, relying on existing data sources. On ground Habitat survey of key habitat areas was carried out in 2025, with more habitat survey work proposed for 2026.

Section 3 details the 2025 habitat survey work, and how survey areas were prioritised. These surveys were undertaken using [UK Habitat Classification](#) system (UK Habs), with

habitat condition scores assigned to each polygon. Section 4 details the proposed habitat survey work for 2026, which will follow the same methodology. UK Habs data will be converted to Phase 1 Habitat Survey Classification for the final Habitat Map, but will retain its UK Habs classification within the data. This is for ease of display in one uniform classification system, as the majority of the mapping will be in Phase 1 Habitat Survey Classification.

It is envisaged that the Habitat Map could be updated periodically with new habitat information in the future, in order to maintain an accurate Habitat Map.

## 2 Methodology

### 2.1 The Draft Basemap

A draft habitat basemap for CEC was produced by NatureScot. This Draft Basemap was created as a sub-component of the [Natural Capital Tool for Scotland](#), and was provided to CEC. The Draft Basemap was created using the [EcoServR](#) process, and consisted of a set of polygons based on Ordnance Survey MasterMap (OSMM) 2023. Each polygon had a [Phase 1 Habitat Classification](#), based on its relationship to the following data sources:

- [OSMM Greenspace and Open Greenspace](#) - A map showing information about publicly accessible urban green spaces across Great Britain. It includes parks, sports facilities and other recreational areas.
- [Corine Land Cover 2018](#) – A map showing land cover types across Europe
- [Habitat Map of Scotland NVC - no overlaps](#) – A map showing National Vegetation Classification habitat surveys within the Habitat Map of Scotland.
- [Scotland Land Cover Map 2022](#) - A map showing Habitat and land cover types, created using AI to classify satellite data to EUNIS habitat classification.
- [Scottish Crop Map 2019](#) - A map showing all the agricultural fields in Scotland categorised into the likely main crop types which were grown in 2019
- Elevation data (APGB BlueSky/GetMapping DTM 5m) – Digital elevation data from a range of sources.
- [National Forest Inventory](#) – A map showing all forest and woodland areas over 0.5 hectare with a minimum of 20% canopy cover, or the potential to achieve it, and a minimum width of 20 metres. This includes areas of new planting, clearfell, windblow and restock.

The Draft Basemap provided an excellent spatial framework using over 600,000 polygons. The map was accurate in many cases, but is incorrect or lacks detail with some of its habitat classifications. It was considered that the Draft Basemap needed revisions and updating in order to be accurate enough for use.

## 2.2 The CEC Habitat Map

In order to create an accurate and final CEC Habitat Map for use, the Draft Basemap will be updated with known local habitat data, and checked for errors (habitat misclassifications and geometry errors). This process is being carried out in house by CEC, by applying habitat attributes from various data sources to the Draft Basemap, and manually correcting geometries in some situations.

### 2.2.1 Local habitat data for inclusion

Recent local habitat data will be integrated into the map. These data sources include:

- Local Biodiversity Site and Country Park habitat data collected in the last 10 years from project inception (from January 2015).
- Other available Phase 1 Habitat Survey data from the last 10 years, such as Holyrood Park Phase 1 Habitat Survey data from Historic Environment Scotland.
- 2025 Sand Dune Habitat Survey data undertaken by CEC Staff.
- 2025 Habitat Survey data undertaken by WSP (refer to Section 3 below)
- 2026 Habitat Survey data to be undertaken by WSP (refer to Section 4 below)

### 2.2.2 Correction of misclassifications

Habitat Classifications within the Draft Basemap will be proofed for errors. This will be carried out through identification of issues, and reclassification of habitats based on known values for the polygons concerned. For example, some woodland types are misclassified within the Draft Basemap, and some railway embankments are classified as railway verge, rather than the actual habitats which are present. These misclassifications will be resolved on a case-by-case basis using the best available data sources. These data sources include the previous 2003 CEC Habitat Map, aerial photography, local species records, and street view imagery.

### 2.2.3 The CEC Habitat Map output

The output of this process will be the first version of the CEC Habitat Map – consisting of a set of OSMM polygons with updated habitat classifications, classified using Phase 1 Habitat Survey classification. Where habitat data was collected using UK Habitat Classification System, it will be converted to Phase 1 Habitat Survey Classification. The data will retain the original UK Habs Classification and Condition Scoring where present. The decision to present the map in Phase 1 Habitat Classification System was taken due to the fact that the majority of the data will be in Phase 1 Habitat Classification. Subsets of the data could be converted to UK Habs in the future if necessary or valuable.

At the time of writing, the first version of the CEC Habitat Map is being produced through the methods described above.

The first version of the CEC Habitat Map will be finalised in 2026.

#### 2.2.4 Limitations

As above, the habitat map is based on habitat classification of over 600,000 OSMM polygons. It would be impossible to ensure that every polygon is 100% accurate in extent and classification for such a large and detailed dataset. The following limitations apply:

- The data contains no line GIS features. Therefore, linear features such as tree lines and hedgerows are not represented consistently in the data, and are often missing. For example, where two field boundaries abut each other, there is no polygon representing hedgerows or tree lines which may separate them. Sometimes these are shown, and are often classified as hedgerows or tree lines. Some linear habitat data is available in the 2003 habitat map data. This data could be included in future versions of the habitat map, however, it is over 20 years old and would need validating.
- The Habitat Map focusses on trying to provide an accurate map of higher nature conservation value habitats which are important to environmental decision making. As such, the mapping focusses on obtaining an accurate classifications for Habitats of Principle Importance (HPI) and all woodland types. Other habitats have not been specifically checked for errors during the creation of the map. For example, low ecological value grassland types and urban habitats have not been checked for errors. False positives (false detection of high value habitats where none are actually present) will be checked for during final proofing, by filtering and systematic checking. False negatives (lack of identification of high value habitats where they are actually present) will be harder to detect, but efforts will be made to identify these through review of known habitat values.
- Efforts have been made to ensure that the important areas of the data are accurate, as above. However, given the size of the dataset, it is anticipated that there will be some residual errors in geometry and classification. For example, incorrect habitats being assigned, or multiple habitats within the same polygon.
- It is not possible to ascertain a high level of specificity with certain habitats using desk-based data only. For example, woodland types can be classified to Broadleaved/Coniferous/Mixed classifications, but it is often not possible to determine species composition, nativeness, and whether the woodland is of semi-natural/plantation origin.

## 3 2025 Habitat Survey

### 3.1 Overview

Funding for some habitat survey work was available through the CP2040 programme. It was proposed to carry out habitat surveys of priority habitat areas, in the context of supporting CP2040. CEC therefore undertook a prioritisation exercise to determine which areas to survey in relation to City Plan 2040, as funding would not be available to survey all areas of higher nature conservation value.

### 3.2 Prioritisation of 2025 habitat survey areas

The choice of which habitat polygons to survey was based on habitat classification, age of existing survey data, and location. The 2003 CEC Phase 1 Habitat Survey Data was used as the base habitat data to select survey locations from, as this is CEC's most recent complete habitat survey dataset.

Firstly, all 2012 Scottish Biodiversity List (SBL) Habitats of Principle Importance (HPI) polygons were selected from the 2003 Phase 1 Habitat Survey dataset. HPI are considered to be the most important habitat types in Scotland, and within CEC. The SBL helps public bodies carry out their Biodiversity Duty under the Nature Conservation Act 2004. Note that this process used the 2012 SBL, which was the current SBL at the time of the work, in early 2025. A new SBL has since been published by NatureScot in December 2025.

On interrogation of the CEC 2003 Phase 1 Habitat Survey data, it was found that woodland HPI classification was inconsistent. Based on interrogation of other datasets and aerial imagery, areas were classified as Phase 1 HPI types that should not be, and there were large areas of woodland that should have been included within HPI classification. [Native Woodland Survey of Scotland](#) (NWSS) HPI data was considered to be more accurate in determining the location of woodland HPI in the CEC boundary.

NWSS was a national woodland survey program conducted by Forestry Commission Scotland between 2006 and 2012. This was considered to be the most accurate widespread woodland dataset which covered the entire CEC boundary. It only identified woodlands over 0.5 ha. Woodlands under 0.5 ha were therefore excluded from this prioritisation exercise.

Therefore, selection of HPI to survey was based on all non-woodland HPI within the 2003 Phase 1 Habitat Survey data, and the woodland HPI from the NWSS dataset. Hereon in, this selection is referred to as the HPI polygons.

The following polygons and part polygons were then removed from the selection of HPI polygons:

- **Polygons which have been subject to habitat survey in the last 10 years (from January 2015)** – It was considered that updated survey for these polygons was not a priority, or necessary. This included approximately 30 Local Biodiversity Sites (LBS), as well as some partner managed areas, such as Holyrood Park
- **Polygons within Local Nature Reserves (LNR) and terrestrial Sites of Special Scientific Interest (SSSIs)**– These were considered to be secure from direct impacts such as development, and were considered a lower priority to survey than other areas of priority habitat, such as those that fall outside of designated sites and are under potential development pressure. Intertidal and marine SSSIs were excluded, as survey of marine and intertidal habitats was not considered in this exercise.
- **Polygons within CP2030 Allocated Sites** – These were sites which have already been allocated for development, or have specific management requirements. These sites have already been investigated to the satisfaction of City Plan 2030, and were allocated. Many have outstanding live planning applications, during which ecological surveys are completed in order to consider the City Plan 2030 requirements for the site. There was limited value in surveying these sites, as they are already allocated.
- **Waterbody polygons** – The classification for waterbodies (ponds, streams, rivers, lochs etc.) is broad within Phase 1 and UK Habitats classification systems. With the exception of several rare classifications which are not expected to be found in the CEC boundary and were not identified during the 2003 Phase 1 Habitat Survey, the classification does not go beyond “Standing” or “Running” Water, and the nutrient status of the water body, which can be derived elsewhere such as the SEPA website. Waterbodies were therefore excluded from prioritised survey areas.
- **Intertidal and coastal habitat polygons** – The areas of mudflat and rocky intertidal habitat in Edinburgh are extensive, and are not expected to have changed significantly in extent since 2003. They also were not mapped accurately in the 2003 habitat mapping.
- **Polygons within the upland of the Pentland Hills (above the enclosed lowland agricultural landscape boundary)** – These are considered unlikely to be subject to development pressure, and are known areas of ecological value.
- **Railway and Road Network Habitats** – The majority of habitats within the road network and railway network were excluded from the exercise. These habitats are difficult to survey due to health and safety restrictions. These habitats generally consist of scrub and semi-natural woodland habitats, which have developed since creation the creation of the underlying features, such as railway and road embankments.

- **Areas which have been developed** – Areas of habitat which have been lost to development since the 2003 map were excluded.
- **Slivers** – Following the GIS processes used to create the set of survey polygons (merging, erasure and clipping of polygons based on spatial interaction with areas for exclusion), polygon slivers remained. These typically consisted of small narrow sections of polygons at the edge of exclusion features, which are erroneous, in that they do not represent areas which should be subject to survey.
- **Areas with other access restrictions** – Other areas where known access restrictions were excluded

The exclusion of the above areas did not necessarily mean that CEC considers them to have less ecological value than other areas.

Note that for areas not subject to on ground surveys, data was still available from other sources, such as Native Woodland Survey of Scotland etc. **Not surveying an area does not mean that no data is available for that area.** The Habitat Map will be populated with the best available data for that area, as per Section 2.

### 3.3 2025 Survey Area

The process of exclusions detailed in Section 3.2 resulted in the creation of a proposed 2025 Habitat Survey area. The proposed survey area consisted of a mix of CEC and non-CEC landholdings.

The survey area consisted of approximately **361 ha** of Habitats of Priority Importance (HPI). As per Section 3.2 above, this consisted of non-woodland HPI identified by the 2003 Phase 1 Habitat Survey, and woodland HPI from the NWSS, minus the exclusions listed.

This resulted in accurate habitat survey and condition assessments for a range of priority habitats that were likely to be constituents of the future Nature Network, and are unlikely to otherwise be surveyed as part of future or existing programs. These include unimproved grasslands (acid and calcareous), various woodland types, marshy grasslands and wetland habitats.

### 3.4 2025 Habitat Survey Outputs

WSP were commissioned to carry out the 2025 habitat survey work. WSP produced the following outputs, for integration into the CEC Habitat Map.

- [UK Habitat Classification](#) (UKHabs) surveys to Level 4 minimum of survey areas within the City of Edinburgh boundary. For each polygon surveyed, WSP recorded UK Habitat Classification and carried out a Habitat Condition Assessment (HCA) using the current [Defra Statutory Biodiversity Metric](#) condition assessment criteria, which is the current industry standard for HCA in this situation.

- For all polygons which could not be accessed, WSP assigned a likely habitat classification and condition score, based on the best available information and professional judgement.
- CEC provided WSP with a selection of polygons to survey, from the Draft Basemap OSMM dataset. WSP assigned survey data to these polygons during, including survey date, UK Habs classification to Level 4 minimum, Biodiversity Metric Habitat Type, and HCA. This was provided back to CEC when completed, to be integrated back into the master dataset. Polygon ID numbers were retained for fast reintegration to the CEC Habitat Map.
- WSP produced a PDF report stating the methodology (for survey and assumption of condition scores), staffing, limitations, and metadata/attribute descriptions for the polygon dataset returned. The report included basic summary tables of total area surveyed, habitat types and HCA.
- In addition, photographs of each polygon/habitat area were provided. Where invasive species were present, the species names was provided for each polygon. For each polygon, dominant species were recorded. Target note data was provided in point data format, containing information such as protected and notable species records, and details of any Invasive Non Native Species (INNS) found.

## 4 2026 Habitat Survey

CEC is intending to carry out habitat classification and HCA surveys for all Local Nature Reserves (LNRs) in 2026. This will be undertaken using funding from CECs [Nature Restoration Fund](#) Edinburgh Process revenue funding.

This habitat data would be used to create a habitat baseline for LNRs, inform LNR management plans, assess habitat change over time, inform strategic planning and monitoring of development, and inform nature conservation and restoration projects.

Designated sites (such as LNRs) are the core areas of the Nature Network, and are essential to nature recovery, being some of the features in the landscape with the highest biodiversity value. Effective biodiversity baselining, management and change tracking on LNRs is therefore essential to CECs Nature conservation objectives, and supports the Council’s Statutory Biodiversity Duty under the Nature Conservation Act 2004, to “further the conservation of biodiversity”. This work also facilitates habitat management elements of the Edinburgh Biodiversity Action Plan, Action GN52 – *“Manage Local Nature Reserves and other natural heritage parks to benefit biodiversity”*.

This survey will be undertaken by contractors in 2026 using UK Habs Methodology as per the 2025 habitat survey brief, and provide outputs identical to those in Section 3.4, above. Data will be integrated into the CEC Habitat Map, as per Section 2.2.1.